



Drought Update Report

NWS Reno

Issued: 11/24/2021

Schedule: Monthly during periods of extreme drought designation



Ho Hum November after big October

Synopsis: The end of October and November have been fairly dry and warm (Figure 1). Besides a short and fairly intense event early on the 9th, very little precipitation has fallen in November. Thanks to the very wet October, water year precipitation is still off to a good start and well above average and only slightly below maximum for SNOTEL sites in the Tahoe/Truckee/Carson and Walker Basins (Figure 2). SNOTEL soil moisture has remained at or very near record highs (Figure 3). Soil moisture benefited from the late October rains, but also warm conditions melting much of the early season snowpack, which is now back to near average (Figure 4).

Evaporative demand has been low recently, thanks again to October, but still very high over the past year (Figure 5). Previous major river rises and gradual recessions from the major atmospheric river storm have led to early water year to date volumes to be well above normal. Water supply forecasts are near average for the water year, thanks to relatively wet soils under the early snowpack on rivers and streams draining the east side of the Sierra (Figure 6). 28 day stream flows are also above normal for most streams draining this side of the Sierra, except where upstream reservoirs were able to capture the increased runoff, most notably along the lower Walker and Carson (Figure 7). Topaz Lake along the West Walker did particularly well, and is currently storing nearly the water year 2021 maximum, but still reporting only 29% of capacity (Figure 7).

Drought conditions as summarized by the US Drought monitor have remained constant in the NWS Reno service area since the October 24-25 storm (Figure 8). Please see an excellent regional drought update and the benefits of the late October atmospheric river storms from our friends at NIDIS [here](#). You can also find a link to the NIDIS 11/22 California-Nevada Drought and Climate Webinar recording [here](#).

Summary of Impacts: No new impacts reported this month. Previous impacts: Extreme fire behavior on the Dixie, Tamarack, and Caldor fires and persistent degraded to hazardous air quality from smoke. Major impacts to agriculture and ranching. Reports include: Reduced irrigation water, early irrigation shut off, many stock ponds and springs dry, reduced hay crops, reduced forage, animal stress, reduced stock weights, and reduced grazing on public lands. Low flows and elevated water temperatures will impact fisheries and stream ecosystems. Recreational impacts include: August 23rd closure of 9 northern California national forests (reopened 9/16), low streamflows (limited and short whitewater season), low lake levels, boat ramp closures, campfire bans, and restrictions. Note: Please report any new or missing drought impacts [here](#).

Drought Mitigation Actions: No new mitigation actions reported this month. Previous Actions: Closure of 9 northern California National forests on August 23rd (reopened 9/16). On August 15th, Governors

Newsom, Sisolack, and 8 other western governors sent a letter to President Biden requesting a federal disaster declaration for drought. On July 8th Governor Newsom expanded a drought emergency to 50 counties, which was expanded to include all 58 counties on October 19th. This now includes Mono County and the entire NWS Reno Service area. All 16 Nevada counties and 50 California counties in California have previously been designated [USDA primary natural disaster areas due to drought](#). The designation increases access to federal assistance for farm operators. Truckee Meadows Water Authority moved to level 2 drought response on May 20th (of four possible levels). Other previously reported actions include: Hauling water (for livestock and wildlife), moving livestock, selling livestock, supplemental feed, campfire and firework restrictions, Note: Please report any new or missing drought mitigation actions to the email below.

Local Drought Outlook: For the short-term, we will remain mostly dry through the end of November. Some simulations have the potential for storms in early December, but odds look relatively low till after about the 5th, when conditions may become more active, but with low confidence this far out. The [8-14 day outlook from the CPC](#) favors above normal temperatures (not pictured) , and leans to above average precipitation over northern California and NW Nevada (Figure 9). [CPC seasonal outlooks](#) for December through February have no signal or for both temperature and precipitation for most of the area, meaning any outcome is equally likely, except for a slight dry lean at the southern portion of our service area (Figure 10). Drought conditions are expected to persist through the winter throughout the area (Figure 11).

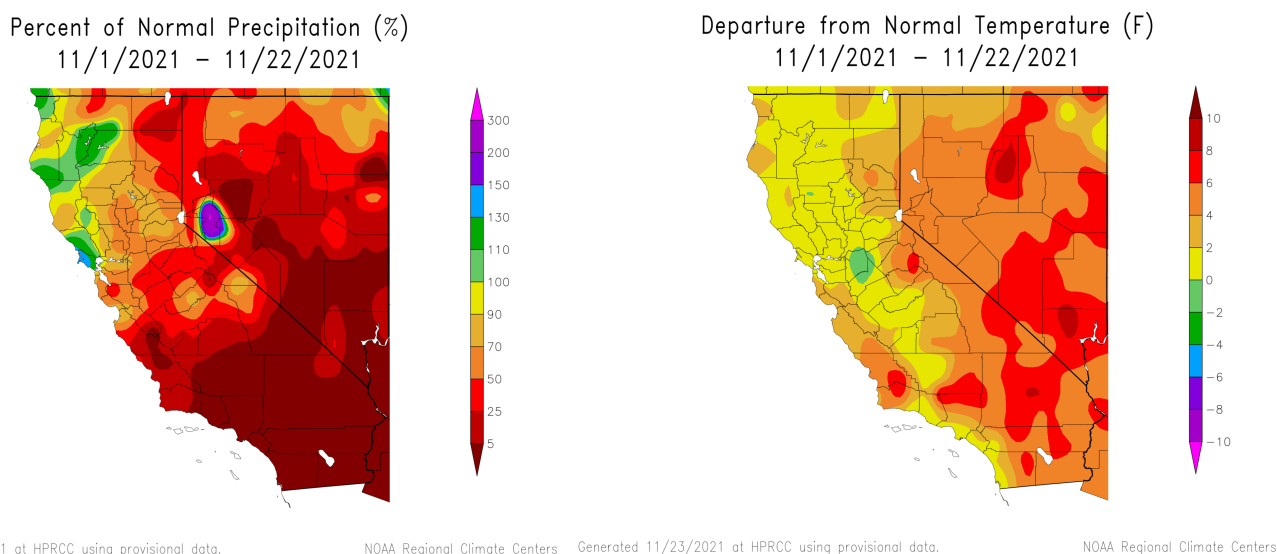


Figure 1. [November month to date precipitation as % of average](#) (left) and [month to date temperature departure](#)(right). Note bullseye of high precipitation around Yerrington maybe a data error.

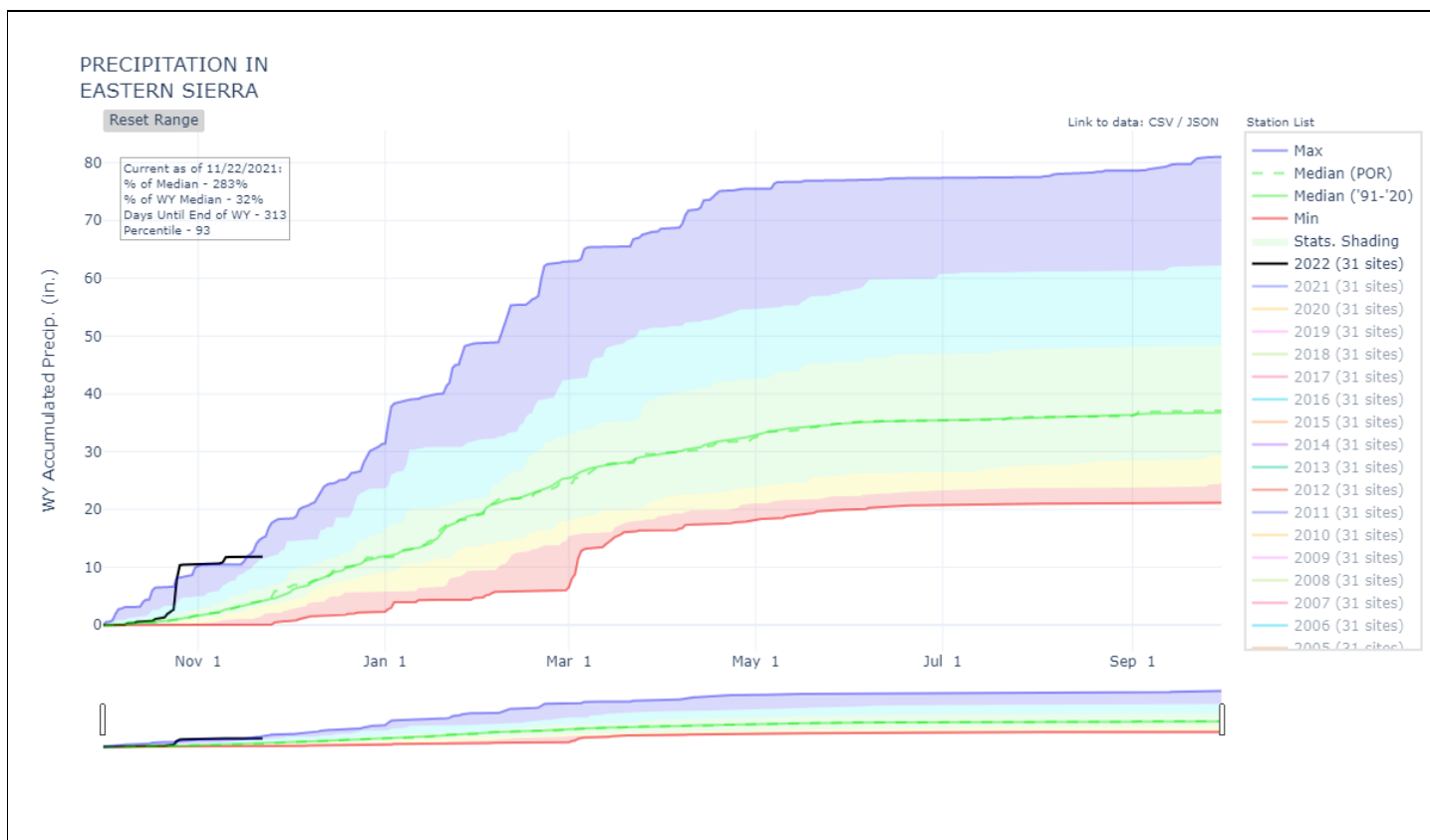


Figure 2. [SNOTEL](#) Water year to date precipitation for the Tahoe, Truckee, Carson, and Walker basins.

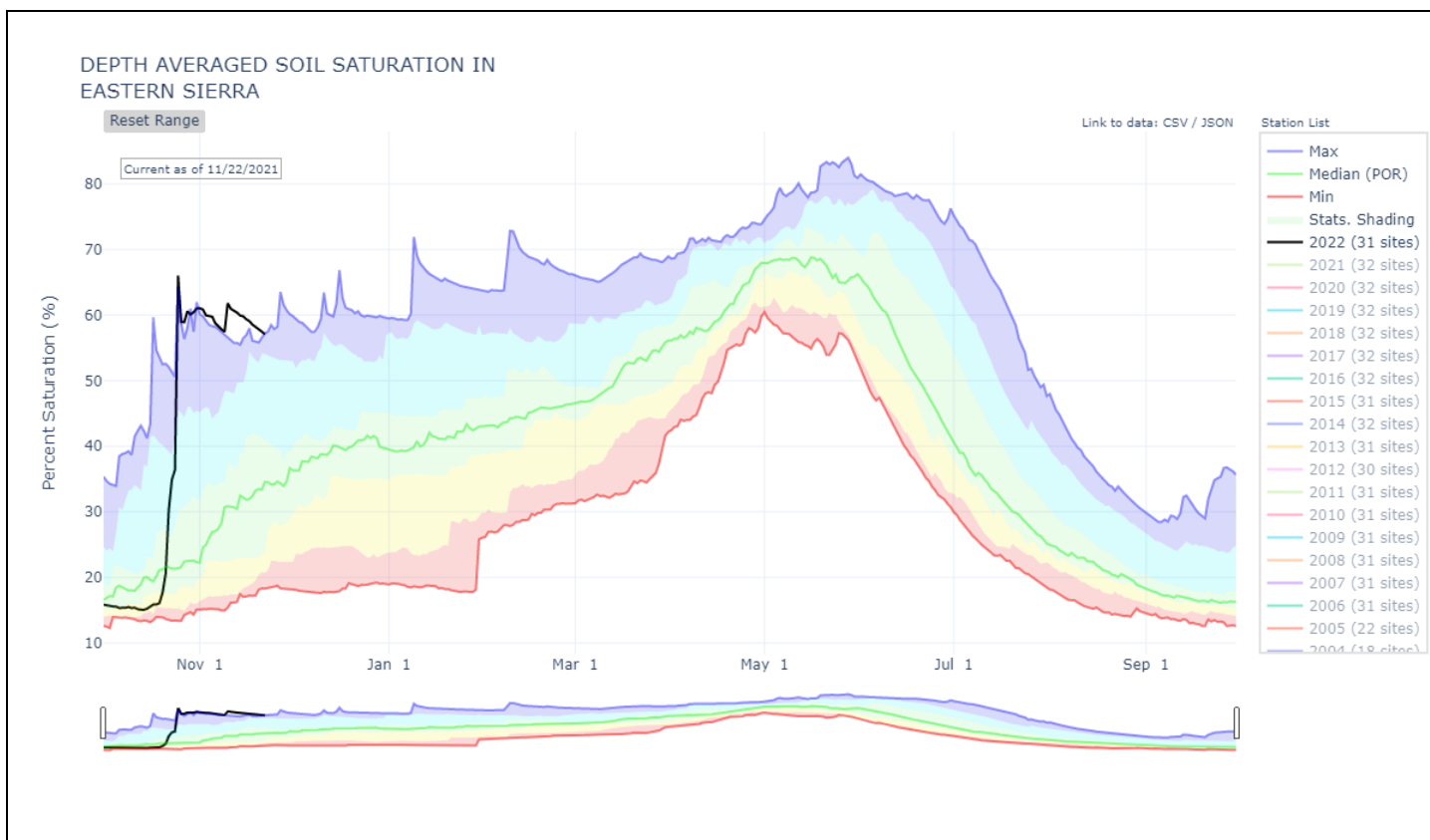


Figure 3. Average [SNOTEL](#) soil moisture for the combined Truckee, Carson, and Walker Basins. Note the relatively short period of record (2004-2021).

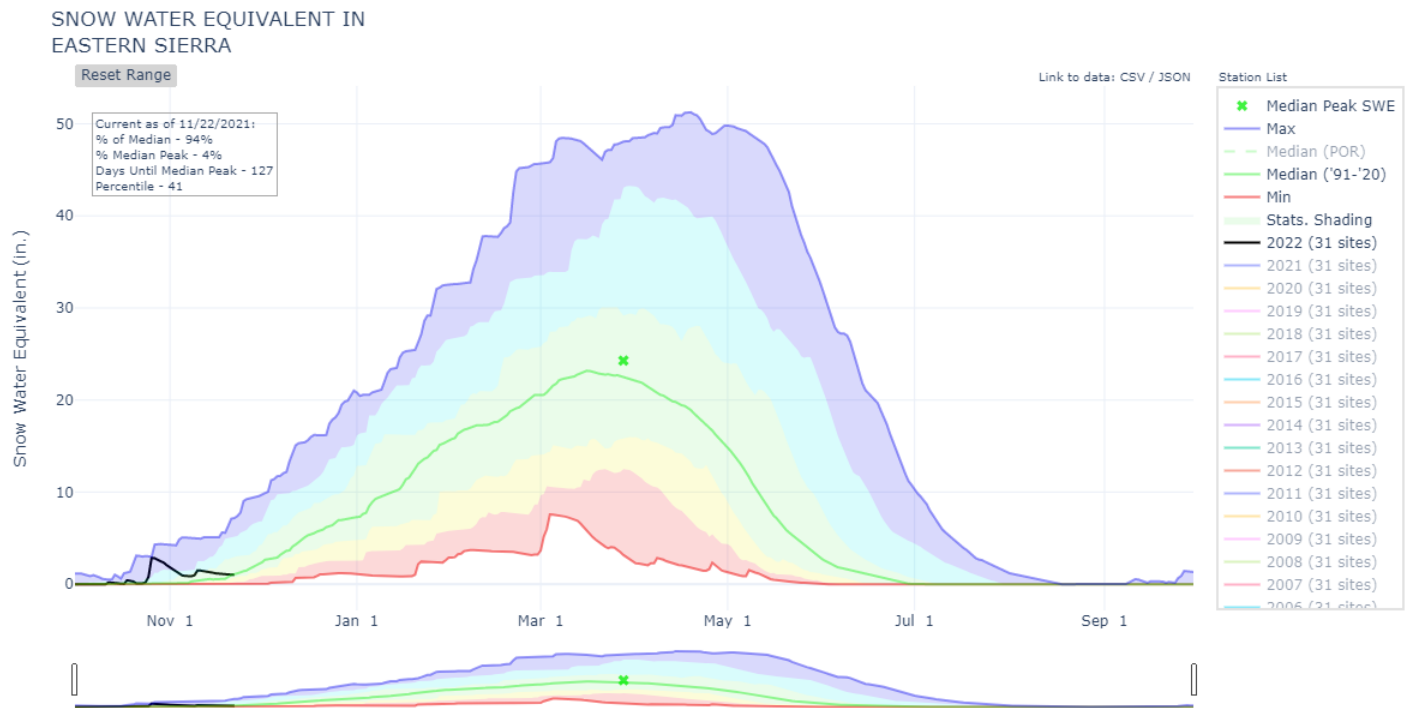


Figure 4. Early Season [SNOTEL](#) snow water equivalent for the combined Tahoe, Truckee, Carson, and Walker River Basins.

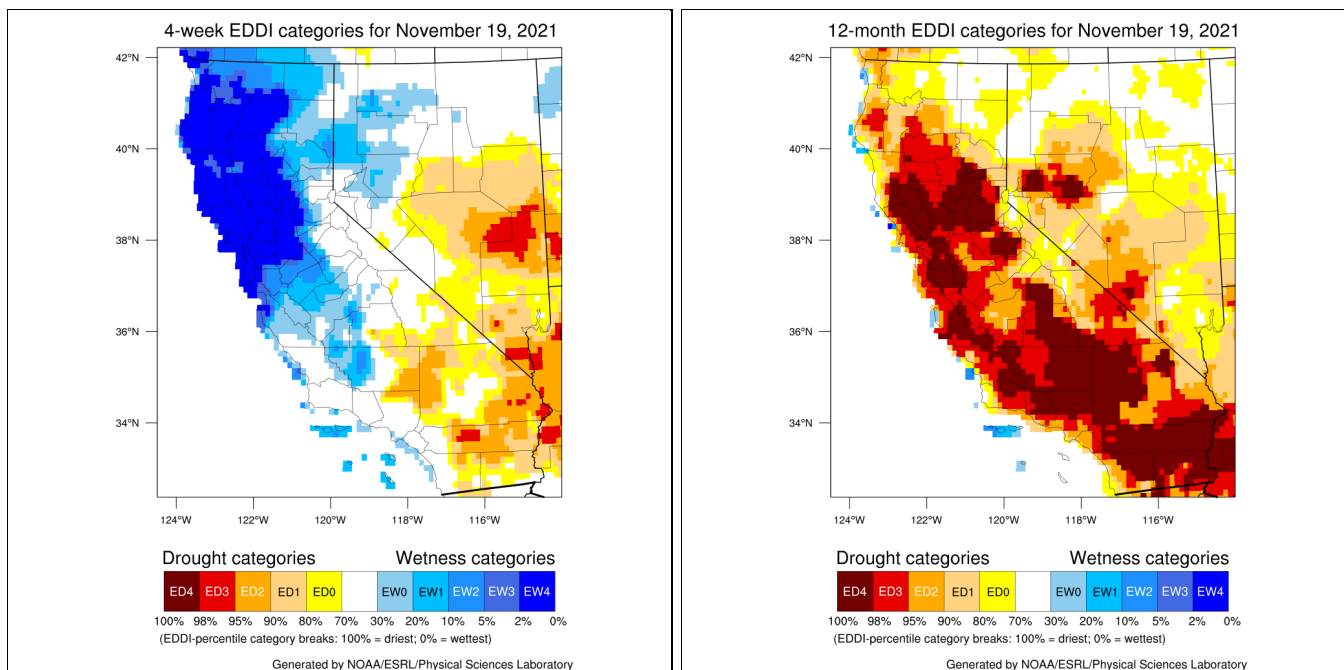


Figure 5. [Evaporative Demand Drought Index](#) for the past 4 weeks on the left and past 12 months on the right.

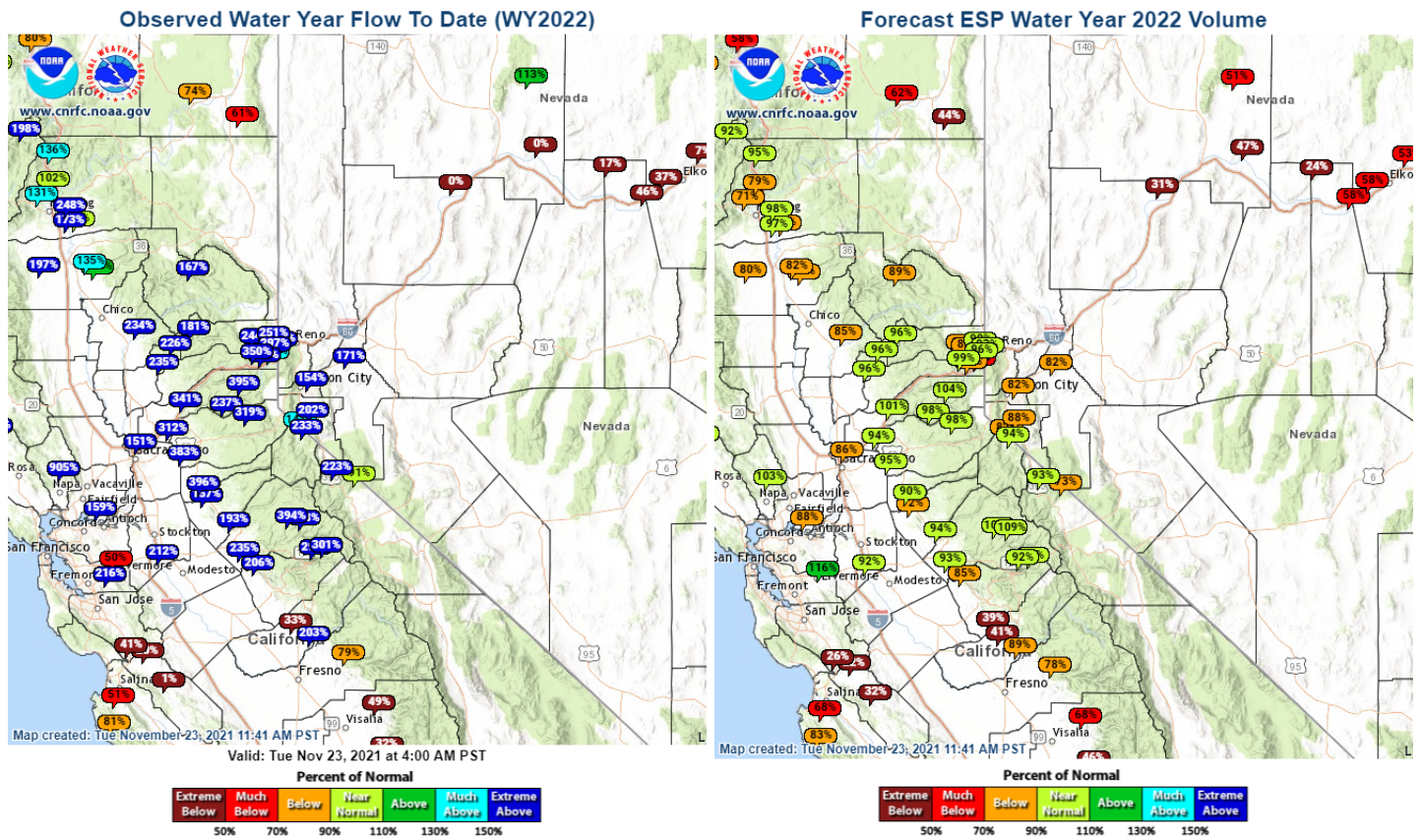


Figure 6. [CNRFC](https://www.cnrfc.noaa.gov) Water Year 2022 Observed Streamflow volume to date and water year forecast volume.

Monday, November 22, 2021

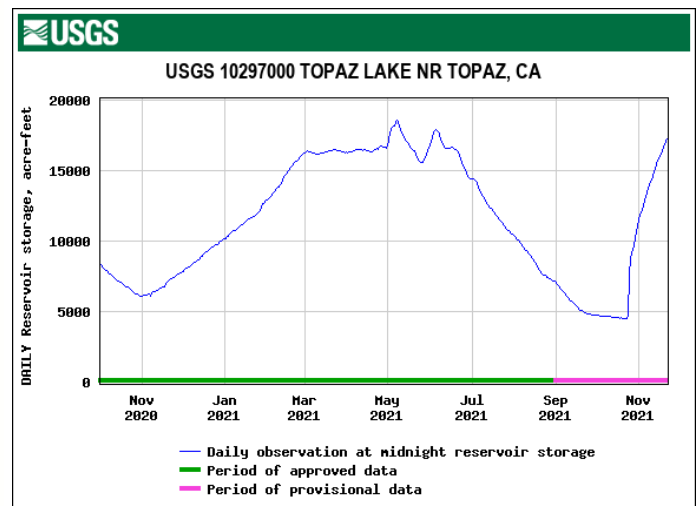
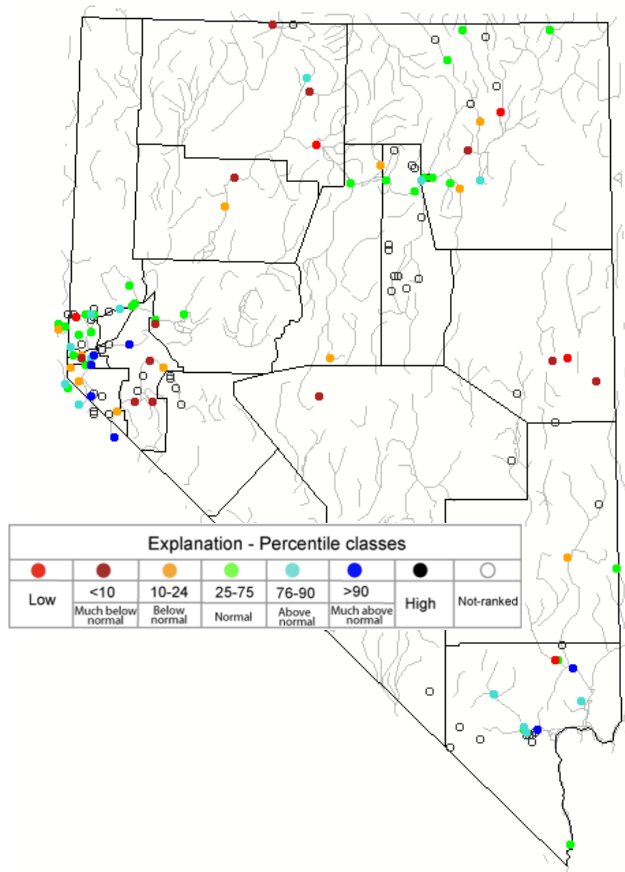
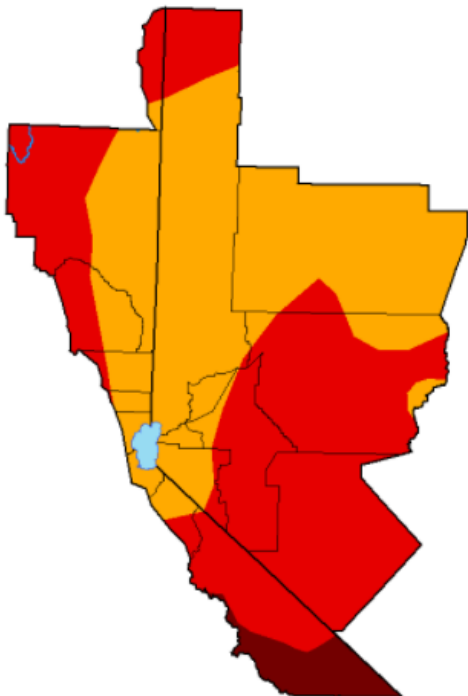


Figure 7. [USGS 28 day streamflow](#) for Nevada and storage plot for Topaz Lake along the West Walker. Topaz Lake had major storage gains since late October and is approaching last year's peak storage, but still only 29% of capacity.

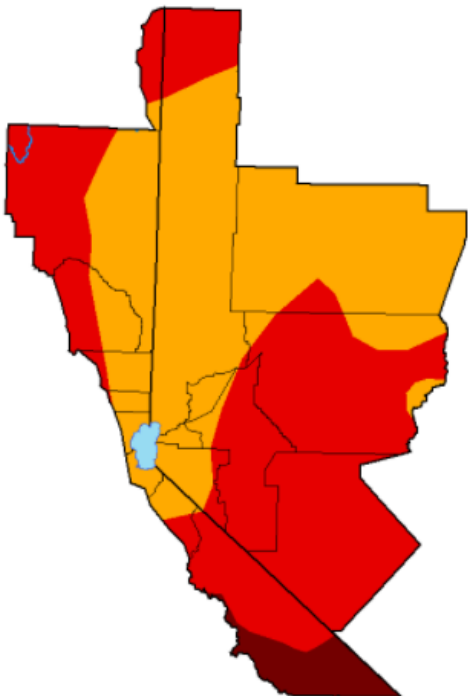
Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)

- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data



< November 16, 2021 >



< October 26, 2021 >



Figure 8. [USDM comparison](#) of drought most current drought conditions on the left, and Late-October on Right.



8-14 Day Precipitation Outlook



Valid: December 1 - 7, 2021
Issued: November 23, 2021

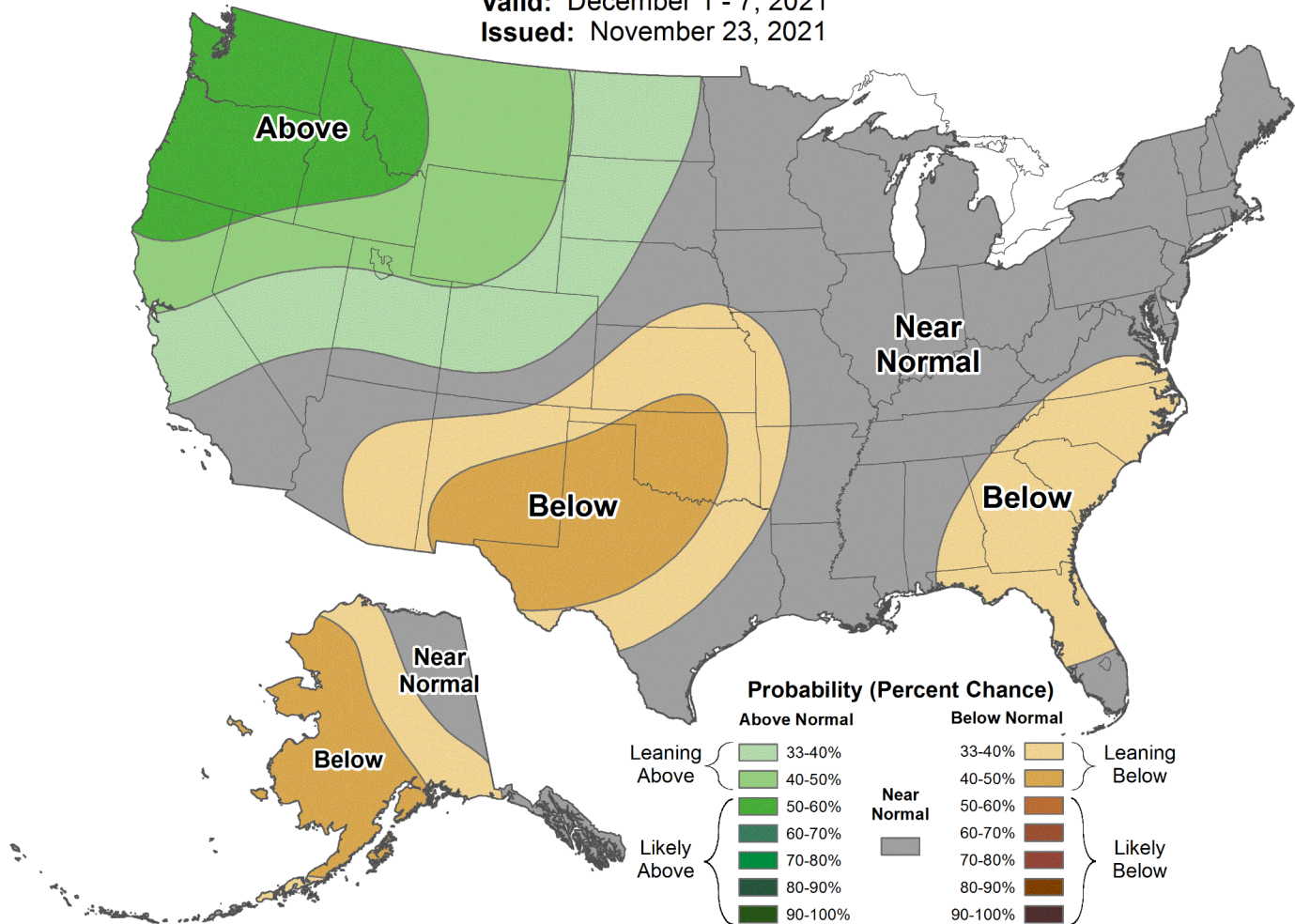


Figure 9. [NOAA CPC 8-14 Day](#) Precipitation Outlook issued 11/23/21

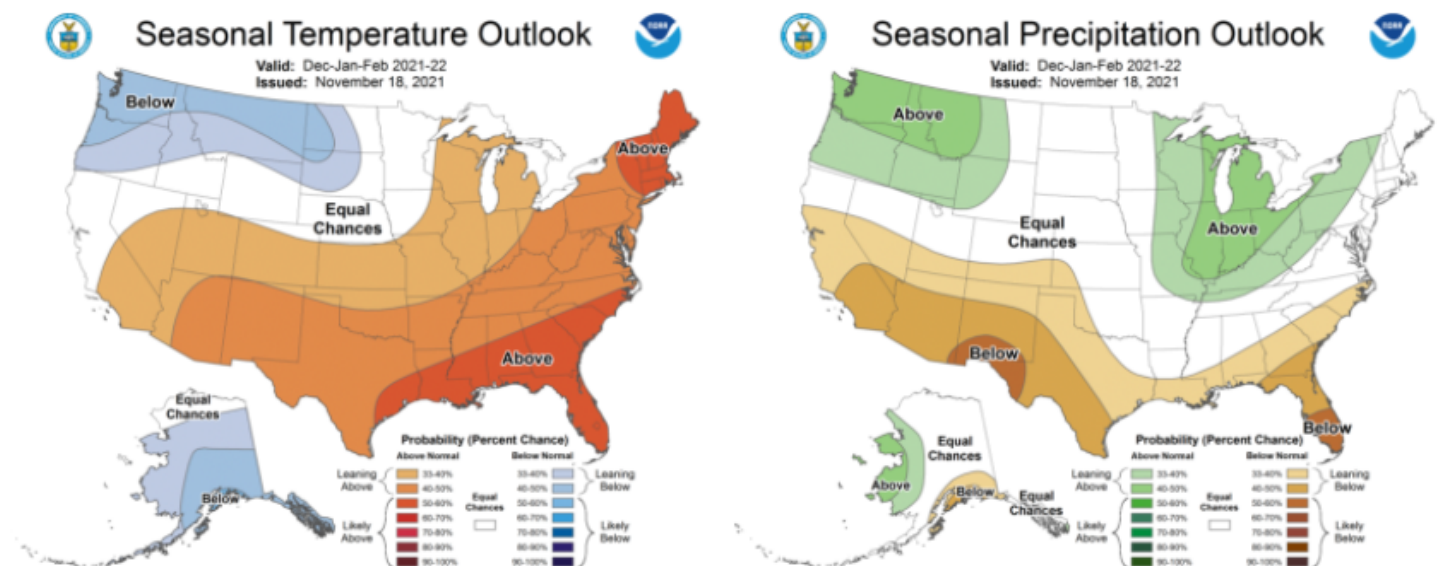


Figure 10. [NOAA CPC](#) December through February temperature (left) and precipitation (right) outlooks. Issued 11/18/21

U.S. Seasonal Drought Outlook

Valid for November 18, 2021 - February 28, 2022

Drought Tendency During the Valid Period

Released November 18, 2021

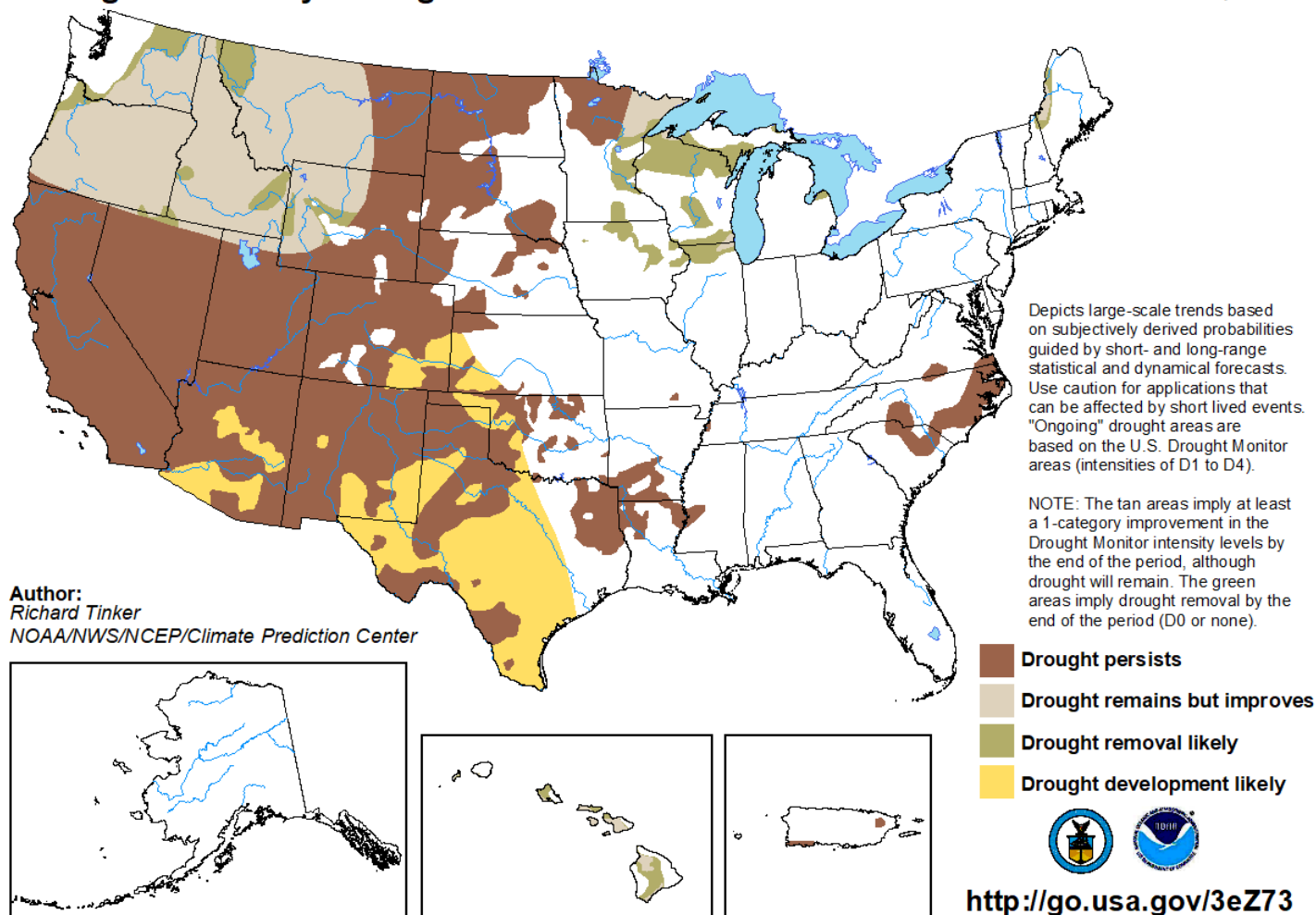


Figure 11. NOAA [CPC Drought Outlook](#) through February, issued 11/18/21.

Weblinks:

NV statewide [Drought update](#)

[NV Living with Drought](#)

[Drought Monitor](#)

[New Drought.gov](#)

[California Nevada Drought Early Warning System](#)

[NOAA CPC Drought page](#)

[CNAP Drought tracker](#)

[California Nevada River Forecast Center](#)

[WRCC Drought Tracker](#)

[WRCC Enso page](#)

[Evaporative Demand Drought Index](#)

[US Seasonal Drought Outlook](#)

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